Emergency Regulations for Cathode Ray Tubes (R-01-06)

Finding of Emergency:

The Department of Toxic Substances Control (DTSC) finds that the immediate adoption of the attached regulations for management of waste cathode ray tubes (CRTs) is necessary for the immediate preservation of the public health and safety and the general welfare.

Waste CRTs must be regulated in a manner that not only protects human health and the environment, but that also promotes the safe collection and recycling of CRTs and ensures adequate CRT recycling capacity for the 6 million CRTs discarded each year in the State. Management of CRTs as "universal wastes" is necessary to achieve these goals.

Emergency Basis (Human Health Hazard): CRTs are found in virtually every household and business in the State. They are used in television sets, computers and scientific equipment. With the rapid evolution of computer technology, computers become obsolete in a short period of time and their CRTs then become waste. Each year, an estimated 6 million CRTs are disposed in California. CRTs are used to visually display electronic information by focusing electrons from an electron gun on light-emitting phosphors on the front portion of the CRT's screen. The decelerating electrons create X-ray radiation that must be shielded to minimize the radiation exposure to the user. Lead in the form of lead oxide is added to the CRT glass to diminish the X-ray flux. The lead is incorporated into the glass tube in varying concentrations with the rear portion of the CRT containing the highest levels of lead. A typical seventeen inch computer monitor contains over two pounds of lead. Larger CRTs may contain up to 10 pounds of lead each.

Lead is a potent developmental neurotoxicant. Recent research has shown that any measurable level of lead found in children's blood is accompanied by statistically significant deficits in intellectual performance. Additionally, lead exposure can result in toxic effects upon the kidneys, circulatory and skeletal systems.

CRTs are currently classified as hazardous waste under both State and federal law. They are identified as a hazardous waste under State law due to the levels of both soluble lead pursuant to Title 22 of the California Code of Regulations (22 CCR), section 66261.24(a)(2) and insoluble lead pursuant to 22 CCR, section 66261.24(a)(3). Discarded CRTs are a hazardous waste under federal law because they exceed the levels for soluble lead pursuant to title 40 of the Code of Federal Regulations (40 CFR), section 261.24 (there is no total lead criteria in federal hazardous waste law). Because CRTs contain significant levels of soluble lead, it is not safe to dispose of CRTs in non-hazardous waste landfills or the general environment (in ditches, farmers fields, etc.)

The lead in CRTs is incorporated into the CRT glass, a solid material. Therefore, the

health threats of concern are limited primarily, to exposure pathways resulting from the long term solubility of the lead from the CRT glass. Potential exposure pathways include drinking lead contaminated water (i.e., leachate from the glass reaches groundwater) and the consumption of tainted food grown in areas of lead contaminated soil.

While the lead in CRT glass poses a risk that must be controlled, CRTs do not present the immediate health risks and dangers posed by many other hazardous wastes (e.g., liquids, ignitable, corrosives, and ingestible poisons). Thus, a regulatory structure that focuses on (and controls) the ultimate disposition of CRTs (rather than focusing on the generator and generation of CRTs) is appropriate.

CRT Generators: Current State and federal laws require waste CRTs to be managed as hazardous waste. A large fraction of the generators of waste CRTs do not generate other hazardous wastes and are not familiar with the hazardous waste laws and regulations. They do not have regulated storage and accumulation points, employee training programs, record keeping systems, or hazardous waste ID numbers. They currently are either: accumulating waste CRTs in unauthorized locations (e.g., their garages), placing them with their trash (non-hazardous landfill disposal), unaware that they cannot be disposed to a municipal landfill, participating in manufacturer/retailer take back programs (that are operating without authorization), or are transporting them to a CRT recycler (who is operating without authorization). Given the requirements that existing law places on households and businesses not typically regulated under the hazardous waste control law, DTSC expects that many households and businesses will continue to dispose of their waste CRTs in ways that could result in the abandonment of CRTs in places that may cause increased potential for human and environmental exposure to lead.

On March 22, 2001, the California Integrated Waste Management Board issued a letter to the solid waste local enforcement agencies informing them that CRTs are hazardous waste when discarded and the disposal of waste CRTs to California's municipal landfills is prohibited. In response, solid waste operators have begun rejecting CRTs (removing them from garbage cans and trash trucks) because the CRTs are hazardous waste under current law. Many landfills have accumulated significant quantities of discarded televisions and monitors. Rejection of CRTs disposed with the trash can be expected to lead to increased rates of illegal disposal. Recently, disposal has been observed in ditches along roadsides, in empty lots, and in other inappropriate places. In adopting the federal universal waste standards, the United States Environmental Protection Agency (U.S. EPA) cited this very issue as being the determinative factor in their choice of standards (universal waste vs. hazardous waste standards). U.S. EPA carefully balanced the needs for environmental protection against the potential for illegal disposal. They produced a carefully crafted proposal that offers adequate protections for lower risk wastes identified as "Universal Wastes" while applying the minimum standards necessary to achieve the needed protections. These considerations are as germane to waste CRTs as they are to the other materials designated as universal wastes - hazardous waste lamps, batteries,

and thermostats.

Imposition of the existing hazardous waste control law standards instead of the universal waste rule standards requires businesses to develop new training and management programs, utilize much more expensive accumulation and transportation options, and subjects businesses to fees and inspections by the local Certified Unified Program Agencies (CUPA).

CRT Collectors: Application of existing law would not only promote illegal disposal by generators, it would also force most businesses operating take back programs (where a manufacturer or retailer accepts waste CRTs when selling new ones), as well as municipalities holding collection events, to abandon those programs. Under current law, persons accepting waste CRTs from offsite are required to obtain a hazardous waste storage facility permit. The expense and the stigma associated with managing hazardous waste far outweigh the value of providing the service of accepting waste CRTs for shipment to a recycler. Thus, implementation of full hazardous waste controls could cause the simplest management alternative for most households and businesses to disappear.

CRT Recyclers: A second issue with waste CRTs is that of recycling. Currently, there are the beginnings of an effective CRT recycling industry in the State. However, none of the CRT recycling facilities are authorized to accept and treat hazardous waste. They do not comply with hazardous waste facility standards that protect neighbors and the State's important groundwater resources. They have not notified the Department of Toxic Substances Control that they are operating and, because their identity is unknown, cannot be inspected (without considerable additional effort). If they are inspected and cited for operation without a permit, the burden of the permit process may result in closure of these recycling operations, given the small profit margin with CRT recycling. Problems identified nationally at CRT recycling facilities include poor worker protection practices, speculative accumulation of large quantities of both intact CRTs and CRT glass (intended for recycling, but stored prior to or in lieu of recycling), and general contamination of surrounding areas with finely divided CRT glass. The proposed regulations specify the required safeguards and standards the recyclers must meet to ensure the recycling is conducted safely. In order to minimize the costs of operation for these facilities, the proposed emergency regulations incorporate these standards into a self-implementing grant of authorization (by regulation) for CRT recyclers performing lower risk recycling (recycling that does not use chemical or thermal treatment). The higher risk processes of the recycling chain, the thermal processing of CRT glass cullet into new CRT glass, would still require a standardized hazardous waste facility permit under the proposed regulations.

This situation constitutes an emergency because disposal of CRTs to municipal landfills

has been halted and there is no infrastructure available in the State that can legally accept waste CRTs other than hazardous waste disposal facilities. Therefore, all of the existing collection (e.g., city and county sponsored collection events) and recycling facilities are illegal. Currently, there is no legal option for handling the 6 million CRTs generated in the State annually, other than disposal at a hazardous waste facility.

Federal Law: CRTs originating from sources other than households or conditionally exempt small generators are identified as hazardous waste under federal law because they exhibit the characteristic of toxicity for lead (40 CFR, section 261.24). While CRTs are clearly hazardous waste under federal law, neither U.S. EPA nor most states have enforced management of CRTs as hazardous waste for the same reasons that California is proposing management under the universal waste rule. In fact, U.S. EPA is currently attempting to develop special management standards for CRTs. However, the DTSC does not expect changes to the federal rules for several years.

Federal law (40 CFR, Part 273) allows the State to independently designate hazardous wastes as universal wastes. These wastes must meet the criteria established by U.S. EPA for designating wastes as universal wastes. They must be generated by a large community, they must be generally (and illegally) disposed in non-hazardous waste landfills, they must not be traditional, industrial-type hazardous wastes, and proper management and compliance under the universal waste rule must be more likely than management under the full hazardous waste control law to promote proper recycling or disposal. Clearly, waste CRTs meet all of these criteria.

Other States: Virtually all other states are now wrestling with this issue, as is California and the U.S. EPA. One state, Minnesota, is handling waste CRTs as universal wastes. Massachusetts and Florida have adopted landfill bans preventing any land disposal of CRTs.

Authority and Reference: These regulations are being adopted under the following authorities:

1. Health and Safety Code (HSC), Section 25141. This section directs the Department of Toxic Substances Control to adopt, by regulation, criteria and guidelines for the identification of hazardous wastes.

2. HSC, Section 25150. This section directs the Department of Toxic Substances Control to adopt standards for the management of hazardous wastes.

3. HSC, Section 58012. This section grants the Department of Toxic Substances Control general authority to adopt regulations.

These regulations implement, interpret, or make specific the following:

1. HSC, Section 25141. This section allows the Department of Toxic Substances Control to determine which wastes are hazardous wastes within the guidelines provided.

2. HSC, Section 25150. This section directs the Department of Toxic Substances Control to adopt standards for the management of hazardous wastes.

Informative Digest: The regulations proposed in this emergency regulatory action respond to the need to provide management alternatives for managing waste and recycling waste CRTs that are commensurate with the risk posed by these activities.

The proposed regulations would apply universal waste rule standards to the accumulation, authorized collection, handling, transportation, and less risky forms of recycling of waste CRTs directly through the regulation.

Existing State Law: These wastes are currently hazardous wastes under State law (and have been since the State's first waste classification regulations were adopted).

Because CRTs are fully regulated as hazardous wastes under current statutes and regulations, all applicable hazardous waste standards currently apply to each generator of waste CRTs.

Existing Federal Law: CRTs became hazardous wastes on or prior to the adoption of the Federal “Toxicity characteristic” or “TC” (1989). However, the U.S. EPA, concerned with the huge universe of generators and the potential for illegal, environmentally improper disposal, has generally deferred any action on waste CRTs until specific regulations can be developed.

U.S. EPA promulgated the federal Universal Waste Rule on May 11, 1995 to streamline the regulation of collection and management of common hazardous wastes, designated as universal wastes, such as batteries, pesticides, and thermostats. The federal Universal Waste Rule establishes alternative management standards for handlers and transporters of these universal wastes. It also contains criteria and authority for states to designate wastes as universal wastes if the wastes meet the criteria established by U.S. EPA for designating universal wastes.

The Proposed Regulations**:** The proposed regulations address hazardous waste CRTs and contain standards that address CRT recycling that differ from those under the current universal waste rule. These proposed regulations amend 22 CCR sections 66261.9 and 66273 et seq. These emergency regulations are needed to establish reasonable

standards which will promote the proper management of waste CRTs by generators (rather than illegal disposal outside of the hazardous waste control system) and provide a legal alternative that is pragmatically possible to comply with. They are also necessary to promote the ongoing collection and recycling activities with needed authorization without curtailing those activities and to apply necessary standards for environmental protection to those activities.

Universal wastes differ from most other hazardous wastes in the following manners:

> Universal wastes are lower risk hazardous wastes because they typically contain lower concentrations of hazardous constituents, lack the mobility of liquid wastes, and lack serious fire, explosion or acute toxicity hazards.
>
> Universal wastes are generated by a wide variety of entities including virtually all businesses and most households. DTSC estimates that there are at least 1,000,000 commercial generators of universal wastes in the State versus about 90,000 active generators of other hazardous wastes. Note that universal wastes are generated at most businesses as opposed to the industrial facilities that generate most other hazardous wastes.
>
> Universal wastes, such as CRTs, are frequently generated in non-industrial settings such as homes, offices, retail and wholesale commercial establishments, and government agencies.

Understanding the difference between universal wastes and other hazardous wastes and between the generators of universal waste and other hazardous waste generators gives insight into the reasons why U.S. EPA felt special management standards were necessary for universal waste.

> The lower degree of hazard (long term lead solubility) requires less stringent management standards.
>
> Regulating the huge number of waste CRT generators under the full hazardous waste regulations would require almost a ten-fold augmentation of regulatory agency resources without a comparable increase in environmental protection.
>
> Most waste CRT generators are not familiar with the hazardous waste control law, do not understand their duties under it, and would be extremely likely to illegally dispose of their wastes if subject to the full hazardous waste control law.
>
> The easily hidden nature of waste CRTs (break them into a trash can) makes illegal disposal simple and unlikely to be detected.

The expense of a hazardous waste facility permit would curtail ongoing CRT collection, transportation, and recycling programs that are necessary to give generators simple and inexpensive disposal options for waste CRTs.

Effect of these Regulation: The proposed regulations would modify the current emergency rules for universal wastes. They would create an exemption from classification as a hazardous waste for waste CRTs and CRT glass managed in compliance with the standards for universal wastes.

Note that the conditional exemption approach does not violate the mandate of HSC Section 25159 to adopt and maintain regulations which allow the State to maintain its Resource Conservation and Recovery Act authorization. State law must be equal or broader in scope and stringency to the corresponding federal law. The scope of the proposed emergency rule is slightly greater than the scope of the federal rule. The stringency is identical because the standards established in the emergency rule are virtually identical to those of the federal Universal Waste Rule and waste CRTs meet the criteria for designation as universal wastes.

Regulatory Standards: The universal waste standards differ greatly from the standard regulations for other hazardous wastes. The universal waste standards allow more flexible management of the wastes than would the full hazardous waste regulations. The universal waste standards were carefully crafted by U.S. EPA to encourage recycling and proper (hazardous waste) disposal while keeping the regulatory burden minimal on all but the final receiving facilities (destination facilities). The management standards of this proposed emergency regulation differs from those of the universal waste standards as follows:

Exemptions: The proposed regulations do not recognize the federal Conditionally Exempt Small Quantity Generator (CESQG) exemption (40 CFR section 261.5). Incorporation of the federal CESQG exemption would allow the disposal of CRTs to municipal solid waste landfills, a result that is contradictory to the goal of this rulemaking.

The proposed regulations do not incorporate an exemption for households similar to the Title 40, CFR, section 261.4 household hazardous waste exemption because this would allow the disposal of CRTs to landfills, a result that is contradictory to the goal of this rulemaking. However, the proposed regulations do provide an exemption from some of the management requirements for small quantity generators, including household generators, to further reduce the regulatory burden placed upon these generators.

The State's existing broader definition of hazardous waste will cause more CRTs to be classified as hazardous waste in this State. Therefore, the

proposed regulations will result in a greater number of CRTs being regulated as universal wastes than would be under the federal waste classification scheme.

These regulations will have several effects:

1. All CRTs currently identified as hazardous wastes will be conditionally exempted from classification as hazardous waste, when managed in accordance with the proposed emergency regulations.

2. Because the wastes will be conditionally exempted from classification as hazardous wastes, they would not require transport using a manifest and a registered hazardous waste hauler, and intermediate accumulation points would not require a full hazardous waste facilities permit.

3. The regulations will continue to require that these wastes ultimately reach a facility permitted to either recycle or dispose of hazardous wastes (destination facility) to retain the conditional exemption.

4. The regulations would create a new, parallel, set of regulatory standards for generators, transporters, and intermediate accumulation points which would be similar to the existing universal waste standards.

5. The proposed regulations would create a new authorization for lower risk CRT recycling activities.

California Environmental Quality Act (CEQA) Compliance: DTSC has determined that the emergency regulations are exempt as an action by the Department of Toxic Substances Control to protect the environment pursuant to Title 14, CCR, section 15308. DTSC has prepared a Notice of Exemption for the emergency rulemaking that will be filed at the Governor's Office of Planning and Research, once the emergency rulemaking is approved by the office of Administrative Law.

Fiscal Impact Estimates: A more detailed exploration of the fiscal impacts of this regulation is attached as "Appendix I."

Mandates on Local Agencies and School Districts pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code**:** DTSC has determined that the proposed regulations will not place a new legal burden on local agencies or school districts. Agency locations and schools will be able to manage the waste CRTs as

universal wastes. Under current law these agencies and schools must manage their waste CRTs as hazardous waste. Additionally, the management standards of this rule are consistent with the standards and authorities of the federal program and are generally the minimum national standards applicable to the waste CRTs.

Estimate of potential cost or savings subject to reimbursement pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code and other non-discretionary costs or savings to local agencies: DTSC has determined that the proposed regulations will not place a new cost on local agencies for management of their own wastes. These agencies will be required to manage their waste CRTs in a more expensive manner than most currently manage them; however, the current management practices are inconsistent with State law. Additionally, the management standards of this rule are generally consistent with the standards and authorities of the federal program and are the minimum national standards applicable to waste CRTs.

Local agencies acting as CUPAs will be required to identify and regulate handlers of offsite universal waste in their areas. However, DTSC has no estimate of the number of facilities which will handle offsite universal waste and expects that most businesses will not handle CRT wastes generated at other locations. CRT material handlers who generate less than 5000 kilograms of CRT materials a year, but do not accept CRT materials from offsite are not subject to notification requirements. CUPAs are authorized to recover all costs for their regulatory activities as local fees (HSC, Section 25404.5). These duties for the CUPAs, however, represent a considerable cost savings from the currently required management practices where each and every generator of waste CRTs would be subject to inspection and enforcement by the CUPAs.

Potential Impact on State Agencies: DTSC has determined that this rule will not create a substantial new impact on State agencies. Those agencies will be required to manage their waste CRTs as universal wastes.

DTSC recognizes that the current management practices are inconsistent with State law and are less expensive than the universal waste approach. However, the management standards of this rule are generally consistent with the standards and authorities of the federal program and are the minimum national standards U.S. EPA has indicated are applicable to these wastes.

Potential Impact on State/Federal Funds: The proposed regulations will place CRT wastes in the universal waste category, this is permissible under the federal program and will not impact federal funding.

Appendix I

Fiscal Impact Analysis
Emergency Regulations for CRTs

General Discussion This appendix examines the fiscal impact upon the State from the proposed emergency regulations for cathode ray tubes (CRTs) commonly found in computer monitors and televisions. This analysis compares the cost to the State from managing discarded CRTs in two distinct manners. These are managing CRTs as hazardous waste and managing CRTs as universal waste. These management scenarios are briefly described below. In order to calculate the fiscal impact upon the State, the Department of Toxic Substances Control (DTSC) contacted multiple State agencies and organizations and obtained data from these agencies regarding the discard rate of CRTs from those individual sources. These data were combined to produce a single number that represents a rate of disposal of CRTs (per employee) by the State. The disposal rate was multiplied by an estimated number of state employees who use computers to yield a total number of CRTs disposed each year by the State. Finally, the total number of CRTs disposed was multiplied by the cost of managing CRTs under each management scenario and the results were compared.

Management of CRTs as Hazardous Waste

As discussed in the Statement of Emergency, CRTs contain sufficient lead to cause them to exhibit the federal characteristic of a hazardous waste, the characteristic of toxicity. Therefore, when they are discarded, pursuant to current federal and State law, non-exempt CRTs are required to be managed as hazardous waste. The proper management of CRTs as hazardous waste includes the following activities: the accumulation of the CRT waste at the point of generation, transportation of the CRT waste via registered hazardous waste transporter with a hazardous waste manifest to a permitted hazardous waste treatment and disposal facility (TSDF), treatment of the CRT waste for disposal [stabilization in accordance with the applicable land disposal restrictions in accordance with 40 CFR, part 268 (i.e., crushing the leaded glass and mixing with concrete to create a stabilized material consisting of a mixture that has a mass of no less than 175 percent (by mass) of the initial mass of the CRT glass)], and land filling at a subtitle C hazardous waste landfill.

Management of CRTs as Universal Waste

The universal waste rule provides a streamlined set of requirements that can be applied, in lieu of full hazardous waste controls, to low risk, high volume hazardous waste streams. This rulemaking proposes to apply these standards to the management of CRT waste in California. The management of CRTs as universal waste includes the moderately regulated accumulation of the universal wastes and the transportation of the waste (not via registered hazardous waste transporter) to a recycling facility and ultimately to a permitted destination facility (e.g, a CRT glass cullet recycling facility).

Disposal Rate of CRTs by the State of California Agencies and Organizations

DTSC found it difficult to obtain documented data regarding the discard/ disposal of crt devices by the States' various agencies and organizations. Currently, most State agencies and organizations act independently when purchasing and discarding computer equipment, including crt monitors. Due to the time constraints posed by this emergency regulation, DTSC could not completely investigate the waste CRT management practices of all the individual State agencies and organizations. Thus, DTSC decided to estimate the disposal rate of CRTs by the State. DTSC contacted a number of agencies and organizations, and obtained specific disposal rate information from them and then averaged the data (see Table I) to arrive at an annual disposal rate of CRTs for the State.

Note: DTSC included the data for all agencies/organizations that had complete records.

Table I

Agency/ Organization	**Number of CRTs discarded last year**	**Number of employees**	**Rate CRTs/ employee**
Department of Alcoholic Beverages Control	5	400	0.0125
California State Polytechnic University, San Luis Obispo	75	2300	0.0326
Division of Occupational Safety & Health (Cal/OSHA)	75	2500	0.03
Department of Toxic Substances Control (H.Q. office)	600	1000	0.6
Board of Forestry and Fire Protection (H.Q. office)	100	430	0.2326
Department of Boating and Waterways	7	80	0.0875
California Youth Authority	300	4500	0.0667
Average Disposal Rate	-	-	**0.0152**

When averaged, the data in Table 1 produces an average disposal rate of CRTs from State agencies and organizations of 0.152 CRTs/employee/year. (The disposal rate of 0.152 means an agency would replace 15 percent of the CRTs each year or all of the CRTs every 6 to 7 years.)

Total Number of CRTs Discarded Per Year by the State

Based on statistics from the California Department of Labor, the State of California employs approximately 450,000 persons. DTSC could not locate data indicating the percentage of those employees that require a computer for their work. However, in a national survey, one of two persons in the United States (U.S.) reported using a computer in the workplace. DTSC used this information to estimate the total number of state employees using computers to be 225,000. Therefore, the total number of CRTs discarded by the State would be approximately:

(225,000 CRTs x 0.152 CRTs/employees/year) = 34,000 CRTs/year.

If we assume a typical computer monitor has a mass of 35 pounds then 34,000 CRTs per year correlates to approximately 595 tons of CRT waste per year.

Cost to the State

When managed under the proposed universal waste regulations the cost to the State for managing CRTs would be essentially the cost of recycling the CRTs (the cost of transportation is included in the recyclers charge for large shipments). The current price for recycling CRTs is in the range of $6 to $10 per monitor[1]. Therefore, the estimated cost to the State would be:

(34,000 CRTs x $6 to $10 per CRT) = $204,000 to $340,000 per year.

(This price has increased significantly in recent months as a result of DTSC's letter clarifying that CRTs could not be disposed in landfills. The proposed regulations contain streamlined permitting requirements for CRT recyclers. These new requirements should promote the opening of new recycling facilities and a corresponding reduction in price resulting from increased competition.)

When managed as hazardous waste, as required by current law, (benchmark level) the cost to the State would be the cost of transporting, stabilizing and land filling the waste at a subtitle C facility. United States Environmental ProtectionAgency (U.S. EPA) estimated a price of $381.00 per ton for disposal of CRT waste in this manner[2]. Therefore, the estimated cost to the State would be:

(595 tons / year x $381.00 per ton) = $227,000 per year.

The costs to the State of managing CRT wastes under the two different waste management scenarios are compared in Table II.

Table II

CRTs	Universal Waste Management	Hazardous Waste Management

[1] Prices quoted during telephone conversations with three recyclers on July 03, 2001.

[2] U.S. EPA, Draft Environmental and Economic Impact assessment of CRT Recycling.

Cost to the State (per year)	$204,000 - $340,000	$227,000

Cost to Local Government

California Department of Labor statistics indicate that county and local governments employ 679,000 persons in the State. If we assume that 100 percent of those employees work for local agencies (worst case assumption), and that 50 percent of those employees require computers, and the disposal rate from those agencies is similar to the disposal rate from State agencies, then local agencies generate approximately 51,600 CRTs annually (679,000 employees x 0.152 CRTs/year/employee = 51,600 CRTs year). Assuming a typical computer monitor has a mass of 35 pounds then 51,600 CRTs per year correlates to approximately 900 tons of CRT waste per year.

When managed under the proposed universal waste regulations the cost to the local government for managing CRTs would be essentially the cost of recycling the CRTs (the cost of transportation is included in the recyclers charge for large shipments). The current price for recycling CRTs is in the range of $6 to $10 per monitor[3]. Therefore, the estimated cost to local government would be:

(51,600 CRTs x $6 to $10 per CRT) = $310,000 to $516,000 per year.

When managed as hazardous waste, as required by current law, (benchmark level) the cost to local government would be the cost of transporting, stabilizing and land filling the waste at a subtitle C facility. U.S. EPA estimated a price of $381.00 per ton for disposal of CRT waste in this manner[4]. Therefore, the estimated cost to local government would be:
[900 tons / year x $381.00 per ton] = $343,000 per year.

The costs to the local government of managing CRT wastes under the two different waste management scenarios are compared in Table III.

Table III

CRTs	Universal Waste Management	Hazardous Waste Management
Cost to local government (per year)	$258,000 - $430,000	$343,000

[3] Prices quoted during telephone conversations with three recyclers on July 03, 2001.

[4] U.S. EPA, Draft Environmental and Economic Impact assessment of CRT Recycling.

As shown in Tables II and III, the proposed regulations will not have significant fiscal impact upon the State or local government (the cost of managing CRTs as universal waste is similar to the cost of managing CRTs as hazardous waste).

However, it should be pointed out that this estimate does not include many of the indirect costs resulting from hazardous waste management. Some of these indirect costs are one-time expenditures that must be made by generators of hazardous waste, for example, training employees and preparing contingency plans. Others are ongoing such as, increased person-hours handling hazardous wastes and increased regulatory oversight of a larger generator base. If these costs were estimated and added to the hazardous waste management cost shown above, the fiscal impact from the proposed regulations would appear to be smaller.

Additionally, if these regulations are not adopted, the existing CRT collection and recycling businesses will be required to obtain permits for storing and treating hazardous waste. Presumably, the cost of obtaining such permits will be passed on to the businesses' customer base, including the State and local government agencies. Thus, the State and local government agencies could experience an increase in expenditures if the proposed regulations are not adopted.

This analysis compared the cost of managing CRTs as hazardous waste (the current legally required benchmark) with the cost of managing CRTs as universal waste (the effect of the proposed regulation). At present most State and local government agencies are not managing CRTs in either of these manners and the numbers indicated represent only theoretical values. Pragmatically, the State and local governments will experience a cost of approximately $300,000.00 per year from managing CRTs in the future, regardless of which management standards are required by law. This amount, $300,000, is no different than that incurred under the current management practices. Currently, most State and local government agencies are managing waste CRTs in a manner that closely resembles the universal waste approach (they are collecting the CRTs and transporting them to a third party collector or recycler). The proposed regulations do not pose any significant additional requirements (other than record keeping and annual notification requirements) upon agencies managing CRTs in this manner. Therefore, there will be no actual additional expenditure or cost to these agencies.

Appendix II

Synopsis of Proposed Regulations

Section 66261.9: This section is amended to add CRT materials to the emergency universal waste rule now in place.

Section 66273.1: This section is amended to add CRT materials to the scope of the universal waste rule.

Section 66273.6: This section establishes the applicability of chapter 23 to CRTs, CRT containing devices and CRT glass. This section describes when CRTs, CRT devices, and CRT glass become a waste.

Section 66273.8: This section establishes an exemption from the universal waste standards for households and conditionally exempt small quantity universal waste generators. CRTs are not included in this exemption because that result would be contradictory to the purpose of this rulemaking. However, an exemption from most of the universal waste management requirements for small quantity generators handling five or less CRT devices is added to this section by this rulemaking.

Section 66273.9: Definitions specific to the management of CRT materials as universal waste are added to this section.

Section 66273.80: This section establishes the applicability of article 7 to CRT material handlers.

Section 66273.81: This section prohibits the disposal of CRT materials.

Section 66273.82: This section establishes the notification requirements for handlers of CRT materials.

Section 66273.83: This section is amended to add the specific handling requirements for CRT material handlers. Additionally, this section provides standards for the allowable treatment that is authorized under the universal waste rule, (i.e., the removal of CRTs from CRT devices).

This section also is amended to create a self-implementing grant of authorization for CRT recyclers that perform lower risk types of recycling

and establishes a requirement for the operator of the recycling facility to submit notification to DTSC. Additionally, this section requires the operator to perform a closure cost estimate and submit to DTSC proof of guaranteed funds for closure of the facility.

Section 66273.84: This section is amended to include the labeling and marking designations to be used for CRT materials that are managed as universal wastes.

Section 66273.85: This section specifies the accumulation time frames for CRT materials.

Section 66273.86: This section specifies the training requirements for employees of handlers of CRT materials.

Section 66273.87: This section specifies that handlers must clean up and properly handle any releases of CRT materials.

Section 66273.88: This section specifies the requirements for offsite shipments of CRT materials.

Section 66273.89: This section specifies the record keeping requirements for shipments of CRT materials.

Section 66273.90: This section specifies the export requirements that are applicable to CRT materials.